REMARKS/ARGUMENTS

Claims 1, 2, 7, 10, 12, 13, 15, 16, 21, 22, 24, 26, 27, 29, and 30 are amended and claims 3, 9, 17, and 23 are canceled herein. With entry of this amendment, claims 1-2, 4-8, 10-16, 18-22, and 24-30 will be pending.

Claims 1-3, 6-11, 13-25, and 27-30 stand rejected under 35 U.S.C. 103(a) as being unpatentable over U.S. Patent No. 5,079,767 (Perlman) in view of U.S. Patent No. 6,538,997 (Wang et al.). Claims 4-5, 12, and 26 stand rejected under 35 U.S.C. 103(a) as being unpatentable over Perlman in view of Wang and further in view of U.S. Patent No. 6,570,881 (Wils).

The Perlman patent is directed to a method of distributing multicast messages. The exchange of messages takes place at the network layer (layer 3) (col. 6, lines 32-44). Perlman describes an example of hardware used to implement the invention as a DEC router. Spanning tree is used to determine the routing forwarding data base. Multicast messages are transmitted to all nodes in the corresponding IP multicast address range by distributing the multicast messages along a unique set of pathways corresponding to the groups containing the nodes in the range.

Wang et al. disclose a method for troubleshooting a path which includes a set of layer 2 and layer 3 devices. When a node receives a packet that includes an indicator that a trace is to be performed, the node inserts data into the packet and forwards the packets to another node in the path.

With regard to claims 1, 15, and 29, neither Perlman nor Wang et al. show or suggest forming a multicast distribution tree based on a spanning tree defined within a layer 2 network and forwarding multicast traffic within the layer 2 network via the formed multicast distribution tree. As discussed above, Perlman describes distribution of multicast messages at layer 3. Wang et al. provide a trace method which passes through layer 2 nodes. Wang et al. do not teach forming a multicast distribution tree

based on a spanning tree defined within a layer 2 network. Instead, Wang et al. simply trace a predefined path.

Claims 1, 15, and 29 have been amended to clarify that multicast traffic is forwarded from a switch within the layer 2 network and that the multicast traffic is forwarded to a MAC address assigned to a multicast distribution group. In contrast to applicants' claimed invention, Perlman forwards traffic from a router in a layer 3 network. Wang et al. do not forward multicast traffic, instead they transmit trace packets in a hop-by-hop process.

Accordingly, claims 1, 15, and 29 are submitted as patentable over Perlman and Wang et al.

Claims 2, 16, and 30 are directed to a method, computer-readable storage medium, and apparatus for operating a node in a layer 2 network to handle multicast traffic. Claims 2, 16, and 30 have been amended to clarify that a join message is received at a switch and the join message is forwarded towards a root bridge of the layer 2 network via a spanning tree of the layer 2 network. Claims 2, 16, and 30 have also been amended to clarify that state information for the multicast distribution group is established based on a received join message.

As previously discussed, neither Perlman nor Wang et al. teach operating a node in a layer 2 network to handle multicast traffic. Furthermore, Perlman does not show or suggest receiving at a port of a switch, a join message for a multicast distribution group or establishing state information for the multicast distribution group if such state information has not already been established. In rejecting the claims, the Examiner refers to col. 2, lines 61-62 of Perlman. This section of the patent describes how link state packets are collected from other nodes to make a list of nodes and their associated status information. There is no discussion of establishing state information for a multicast distribution group. Furthermore, Perlman does not teach establishing state information for a multicast distribution group based on a received join message.

Moreover, Perlman does not show or suggest adding a port to a port list associated with state information, wherein the port list is used to select ports for forwarding received multicast traffic of a multicast distribution group. In rejecting the claim, the Examiner refers to an update process 340 (Fig. 3) of Perlman. The update process receives link state packets and neighbor events and generates link state packets for the node. The update process may add or delete neighbor nodes or notify decision process 330 of a variation in the link state packet data base. There is no disclosure of adding a port, at which a join message was received, to a port list associated with state information.

Accordingly, claims 2, 16, and 30 are submitted as patentable over the cited references.

Claims 3-8, depending from claim 2, and claims 17-22, depending from claim 16, are submitted as patentable for at least the same reasons as their base independent claim.

Claims 3, 6, 17, and 20 are further submitted as patentable over Wang et al., which do not show or suggest forwarding a join message. As discussed above, Wang et al. describe a transmitting packets along a trace path rather than forwarding join messages or multicast traffic. The trace packets are sent along a path towards a trace response node or destination (Fig. 2). Furthermore, there is no use of attraction points or attraction point advertisement messages, as set forth in claims 6 and 20.

Claims 12, 13, 26 and 27 have been amended to clarify that multicast traffic is received at a switch within a layer 2 network. Claims 12, 13, 26, and 27, and the claims depending therefrom are submitted as patentable for at least the reasons set forth above with regard to claims 1-6.

Claims 12 and 26 are further submitted as patentable over Perlman and Wang et al, which do not show or suggest flooding an advertisement message throughout a layer 2 network via a spanning tree, wherein the advertisement message establishes a node as

an attraction point for a multicast distribution group. Perlman uses conventional layer 3 methods for distributing multicast traffic and therefore does not need to advertise an attraction point as set forth in the claims. Wang et al. send a trace message from one node to another node. Thus, there is no flooding of an advertisement message in Wang et al.

With regard to claims 13 and 27, neither Perlman nor Wang et al. propagate an advertisement message through a layer 2 network via a spanning tree of the layer 2 network. As previously discussed, Perlman uses link state packets for calculation of pathways through the network. Since the multicast traffic is distributed at layer 3, there is no advertisement message identifying an attraction point for multicast packets propagated through a layer 2 network. Furthermore, since the conventional multicast distribution is sent to a specified receiver or forwarder, there is no need to advertise an attraction point for multicast traffic addressed to a multicast distribution group.

Applicants also note that the Examiner has failed to point to teachings of the specific limitations set forth in claims 7-30.

Wils et al. disclose a high-speed trunk cluster reliable load sharing system using temporary port down. The Examiner cites Wils et al. with references to IGMP messages. Wils et al. do not overcome the deficiencies of the primary references discussed above.

With regard to claims 5 and 19, Wils et al. do not show or suggest flooding a join message via a spanning tree of a layer 2 network. In rejecting claim 5, the Examiner refers to col. 2, lines 56-57 of Wils et al. This section of the packet simply notes that spanning tree, TCMP, IGMP, and GARP packets are flooded.

For the foregoing reasons, Applicant believes that all of the pending claims are in condition for allowance and should be passed to issue. If the Examiner feels that a telephone conference would in any way expedite prosecution of the application, please do not hesitate to call the undersigned at (408) 399-5608.

Respectfully submitted,

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